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Inventor: Mie YOSHINO, et al.

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IN THE CLAIMS

Please amend the claims as follows:

Claims 1-20 (Canceled).

Claim 21 (New): A liquid development method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid, via an application member, to a surface of a developer support used to develop a latent image on a

surface of a latent image support;

before developing the latent image, compressing the toner on the developer support

surface by press-contacting a before-development toner compression member against the

developer support surface at a location downstream, in a moving direction of the developer

support surface, of where the developer support faces the application member and upstream,

in a moving direction of the developer support surface, of where the developer support faces

the latent image support; and

applying independent voltages to the developer support and the before-development

toner compression member.

Claim 22 (New): The liquid development method of claim 21, wherein one of the

developer support and the before-development toner compression member are flexible.

Claim 23 (New): The liquid development method of claim 21, wherein the

independent voltages applied to the developer support and the before-development toner

compression member have a potential difference which moves the toner towards the

developer support.

Claim 24 (New): The liquid development method of claim 21, further comprising:

cleaning a surface of the before-development toner compression member at a location

downstream, in a moving direction of the before-development toner compression member

surface, of where the before-development toner compression member faces the developer

support.

Claim 25 (New): The liquid development method of claim 21, wherein the

independent voltages applied to the developer support and the before-development toner

compression member have a potential difference which prevents adhesion of toner to the

before-development toner compression member.

Claim 26 (New): The liquid development method of claim 21, wherein the developer

support and the before-development toner compression member have substantially a same

potential in a portion where the developer support and the before-development toner

compression member communicate via the developer.

Claim 27 (New): The liquid development method of claim 21, wherein the latent

image support comprises a-Si.

Claim 28 (New): A liquid development method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid, via an

application member, to a surface of a developer support used to develop a latent image on a

surface of a latent image support;

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before developing the latent image, compressing the toner on the developer support

surface by applying independent voltages to the developer support and a before-development

toner compression member, the before-development toner compression member facing the

developer support surface at a location downstream, in a moving direction of the developer

support surface, of where the developer support faces the application member and upstream,

in a moving direction of the developer support surface, of where the developer support faces

the latent image support,

wherein the before-development toner compression member and the developer

support are separated by a gap therebetween.

Claim 29 (New): The liquid development method of claim 28, wherein a surface

roughness of the developer support and a surface roughness of the before-development toner

compression member are $Rz = 10 \mu m$ or less.

Claim 30 (New): The liquid development method of claim 28, wherein the

independent voltages applied to the developer support and the before-development toner

compression member have a potential difference which moves the toner towards the

developer support.

Claim 31 (New): The liquid development method of claim 28, further comprising:

cleaning a surface of the before-development toner compression member at a location

downstream, in a moving direction of the before-development toner compression member

surface, of where the before-development toner compression member faces the developer

support.

Claim 32 (New): The liquid development method of claim 28, wherein the independent voltages applied to the developer support and the before-development toner compression member have a potential difference which prevents adhesion of the toner to the before-development toner compression member.

Claim 33 (New): The liquid development method of claim 21, wherein the developer support and the before-development toner compression member have substantially a same potential in a portion where the developer support and the before-development toner compression member communicate via the developer.

Claim 34 (New): The liquid development method of claim 28, wherein the latent image support comprises a-Si.

Claim 35 (New): A liquid development method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid, via an application member, to a surface of a developer support used to develop a latent image on a surface of a latent image support;

before developing the latent image, compressing the toner on the developer support surface by applying independent voltages to the developer support and a conductive surface of a before-development toner compression member, the before-development toner compression member facing the developer support surface at a location downstream, in a moving direction of the developer support surface, of where the developer support surfaces the application member and upstream, in a moving direction of the developer support surface, of where the developer support surface, of where the developer support surfaces the latent image support,

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wherein the before-development toner compressing member and the developer

support do not directly touch one another.

Claim 36 (New): The liquid development method of claim 35, further comprising:

if a gap is not formed between the before-development toner compression member

and the developer support, insulating the developer support from the before-development

toner compression member in a portion where the developer is not applied the to the

developer support.

Claim 37 (New): The liquid development method according to claim 36, wherein if a

gap is not provided between the before-development toner compression member and the

developer support, or if the before-development toner compression member abuts against the

developer support with a nip, the before-development toner compression member abuts

against the developer support via an insulation member in the portion where the developer is

not applied.

Claim 38 (New): The liquid development method according to claim 36, wherein if a

gap is not provided between the before-development toner compression member and the

developer support, or if the before-development toner compression member abuts against the

developer support with a nip, at least the surface of at least either one of the before-

development toner compression member and the developer support is formed of an insulation

member, in the portion where the developer is not applied.

Claim 39 (New): The liquid development method of claim 35, further comprising:

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if a gap is not provided between the before-development toner compression member and the developer support, shortening one of the before-development toner compression member and the developer support to less than an application width of the developer.

Claim 40 (New): The liquid development method of claim 35, wherein the latent image support comprises a-Si.

Claim 41 (New): A liquid development method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid to a surface of a developer support used to develop a latent image on a surface of a latent image support; and

before developing the latent image, compressing the toner on the developer support surface by applying a voltage to a conductive surface of a before-development toner compression member,

wherein the before-development toner compression member faces the developer support via the developer so as not to directly touch with each other.

Claim 42 (New): The liquid development method of claim 41, further comprising: if a gap is not formed between the before-development toner compression member and the developer support, insulating the developer support from the before-development toner compression member in a portion where the developer is not applied the to the developer support.

Claim 43 (New): The liquid development method according to claim 42, wherein if a gap is not provided between the before-development toner compression member and the

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developer support, or if the before-development toner compression member abuts against the

developer support with a nip, the before-development toner compression member abuts

against the developer support via an insulation member in the portion where the developer is

not applied.

Claim 44 (New): The liquid development method according to claim 42, wherein if a

gap is not provided between the before-development toner compression member and the

developer support, or if the before-development toner compression member abuts against the

developer support with a nip, at least the surface of at least either one of the before-

development toner compression member and the developer support is formed of an insulation

member, in the portion where the developer is not applied.

Claim 45 (New): The liquid development method of claim 41, further comprising:

if a gap is not provided between the before-development toner compression member

and the developer support, shortening one of the before-development toner compression

member and the developer support to less than an application width of the developer.

Claim 46 (New): The liquid development method of claim 41, wherein the latent

image support comprises a-Si.

Claim 47 (New): A liquid development method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid, via an

application member, to a surface of a developer support used to develop a latent image on a

surface of a latent image support;

before developing the latent image, compressing the toner on the developer support

surface by charging a before-development toner compression member facing the developer

support surface at a location downstream, in a moving direction of the developer support

surface, of where the developer support faces the application member and upstream, in a

moving direction of the developer support surface, of where the developer support faces the

latent image support; and

applying a voltage to the developer support.

Claim 48 (New): The liquid development method of claim 47, wherein the before-

development toner compression member comprises a photosensitive body.

Claim 49 (New): The liquid development method of claim 47, wherein the latent

image support comprises a-Si.

Claim 50 (New): A liquid development method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid to a surface

of a developer support used to develop a latent image on a surface of a latent image support;

and

before developing the latent image, compressing the toner on the developer support

surface by press-contacting an insulation surface of a before-development toner compression

member against the developer support surface,

wherein a voltage is applied to the developer support and the before-development

toner compression member is charged by a charging mechanism.

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Claim 51 (New): The liquid development method of claim 50, wherein the beforedevelopment toner compression member comprises a photosensitive body.

Claim 52 (New): The liquid development method of claim 50, wherein the latent image support comprises a-Si.

Claim 53 (New): A liquid development method of an electrostatic latent image comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid and having a viscosity of from 100 to 1000 mPa·s, via an application unit having a plurality of rollers, to a surface of a developer support used to develop an electrostatic latent image;

applying a voltage to at least one roller of the plurality of rollers; and applying a voltage between a feed roller soaked in the liquid developer and a conductive plate arranged in a tank holding the developer to thereby control the number of revolutions of the feed roller and the density of the liquid developer.

Claim 54 (New): The liquid development method of claim 53, further comprising: measuring the density of the liquid developer applied on the developer support, to thereby control the application of voltage to the at least one roller of the plurality of rollers.

Claim 55 (New): The liquid development method of claim 53, further comprising: measuring the density of the liquid developer applied on the developer support to thereby control a peripheral velocity of the plurality of rollers.

Claim 56 (New): The liquid development method of claim 53, wherein the plurality of

rollers, excluding the feed roller, are of substantially a same potential as a voltage applied to

the developer support.

Claim 57 (New): The liquid development method of claim 53, wherein the density of

the liquid developer is controlled by generating a potential difference between a carrier roller

of the plurality of rollers and the feed roller, and

the carrier roller is separated by a predetermined gap from the feed roller.

Claim 58 (New): The liquid development method of claim 53, wherein the plurality of

rollers has an application roller which makes contact with the developer support, and

the density of the liquid developer is controlled by generating a potential difference

between the application roller and the developer support.

Claim 59 (New): The liquid development method of claim 53, wherein the plurality of

rollers has an application roller which makes contact with the developer support,

a carrier roller is separated by a predetermined gap from the feed roller and brought

into contact with the application roller, and

the density of the liquid developer is controlled by generating a potential difference

between the carrier roller and the application roller.

Claim 60 (New): The liquid development method of claim 53, wherein the liquid

developer includes an insulation liquid having a viscosity from 0.5 to 1000 mPa·s, an

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electrical resistance of at least $10^{12} \Omega$ cm, a surface tension of 21 dyn/cm or less, and a boiling

point of 100°C or higher.

Claim 61 (New): The liquid development method of claim 60, wherein the insulation

liquid includes silicon oil.

Claim 62 (New): The liquid development method of claim 53, wherein the toner of

the liquid developer has an average particle diameter of from 0.1 to 5 µm in a density of from

5 to 40%.

Claim 63 (New): A wet-type image formation method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid to a surface

of a developer support used to develop an electrostatic latent image on a surface of a latent

image support;

generating an electric field between the latent image support and the developer

support, to develop the electrostatic latent image on the latent image support with the liquid

developer on the developer support;

generating a background electric field between a background section on the latent

image support and the developer support, to attract a background residual toner remaining in

the background section on the latent image support towards the developer support after

development by the background electric field, to thereby remove the background residual

toner from the background section; and

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setting an absolute value of the background electric field substantially equal to or less

than a value at which the background residual toner attracted towards the developer support

does not flocculate.

Claim 64 (New): The wet-type image formation method of claim 63, wherein the

range of the background electric field is set to be not higher than 3.5×10^7 V/m in an absolute

value.

Claim 65 (New): The wet-type image formation method of claim 64, comprising:

attracting and removing the background residual toner remaining in the background

section on the latent image support after development; and

generating a removal electric field between the background section on the latent

image support and the removal member, an absolute value thereof being less than or equal to

a value at which the background residual toner attracted towards the developer support does

not flocculate.

Claim 66 (New): The wet-type image formation method of claim 64, wherein the

range of the removal electric field is set to be not higher than 5.0×10^7 V/m in an absolute

value.

Claim 67 (New): The wet-type image formation method of claim 64, further

comprising:

attracting and removing the background residual toner remaining in the background

section on the latent image support after development; and

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recycling the background residual toner attracted to the removal member for

development.

Claim 68 (New): The wet-type image formation method of claim 63, further

comprising:

recycling the residual toner remaining on the developer support for development.

Claim 69 (New): The wet-type image formation method of claim 68, further

comprising:

attracting and removing the background residual toner remaining in the background

section on the latent image support after development; and

generating a removal electric field between the background section on the latent

image support and the removal member, the absolute value thereof being set to less than or

equal to a value at which the background residual toner attracted towards the developer

support does not flocculate.

Claim 70 (New): The wet-type image formation method of claim 68, wherein the

range of the removal electric field is set not higher than $5.0 \times 10^7 \,\text{V/m}$ in an absolute value.

Claim 71 (New): The wet-type image formation method of claim 68, further

comprising:

attracting and removing the background residual toner remaining in the background

section on the latent image support after development; and

recycling the background residual toner attracted to the removal member for development.

Claim 72 (New): The wet-type image formation method of claim 63, further comprising:

attracting and removing the background residual toner remaining in the background section on the latent image support after development; and

generating a removal electric field between the background section on the latent image support and the removal member, the absolute value thereof being set less than or equal to a value at which the background residual toner attracted towards the developer support does not flocculate.

Claim 73 (New): A wet-type image formation method comprising:

developing an electrostatic latent image on a latent image support which supports the electrostatic latent image via a developer support which supports a liquid developer containing a toner dispersed in a carrier liquid;

attracting and removing a background residual toner remaining in the background section on the latent image support after development; and

generating a removal electric field between the background section on the latent image support and the removal member, the absolute value thereof being set to less or equal to a value at which the background residual toner attracted towards the removal member does not flocculate.

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Claim 74 (New): The wet-type image formation method of claim 73, wherein the

range of the removal electric field is set to not higher than $5.0 \times 10^7 \,\text{V/m}$ in an absolute value.

Claim 75 (New): The wet-type image formation method of claim 73, further

comprising:

recycling the background residual toner attracted to the removal member for

development.

Claim 76 (New): The wet-type image formation method of claim 73, wherein the

range of the removal electric field is set to not higher than 5.0×10^7 V/m in an absolute value.

Claim 77 (New): The wet-type image formation method of claim 73, further

comprising:

attracting and removing the background residual toner remaining in the background

section on the latent image support after development; and

recycling the background residual toner attracted to the removal member for

development.

Claim 78 (New): The wet-type image formation method of claim 73, wherein the

thickness of the liquid developer applied on the developer support is such that a content of a

pigment in the toner which is supported per 1 cm² on the surface of the developer support is

set to at least 0.1 µg and not higher than 2 µg.

Claim 79 (New): An image formation method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid to a surface

of a developer support used to develop a latent image on a surface of a latent image support;

transferring a manifest image on the latent image support developed by the liquid

developer to a transfer material;

pressing the developer support against the latent image support to thereby form a

developing nip corresponding to a pressurizing force applied by the developer support; and

setting the width of the developing nip, being the size in the moving direction on the

surface of the developer support and of the latent image support, in a portion at which the

developer support comes in contact with the latent image support, to a predetermined size by

adjusting the size of the pressurizing force.

Claim 80 (New): The image formation method of claim 79, wherein an elastic

surface layer forms the surface of the developer support.

Claim 81 (New): The image formation method of claim 79, further comprising:

increasing the pressurizing force by moving the developer support in a direction of the

latent image support.

Claim 82 (New): The image formation method of claim 79, wherein the developer

support and the latent image support are formed by a roller member, respectively, and

the size of the pressurizing force is set by a distance between axes of the roller

members.

Claim 83 (New): The image formation method according to claim 79, wherein the pressurizing unit has a pressurizing force adjusting unit which adjusts the size of the pressurizing force.

Claim 84 (New): An image formation method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid to a surface of a developer support used to develop a latent image on a surface of a latent image support;

transferring a manifest image on the latent image support developed by the liquid developer to a transfer material;

pressing the developer support against the latent image support to thereby form a developing nip corresponding to a pressurizing force applied by the developer support;

setting the width of the developing nip, being the size in the moving direction on the surface of the developer support and of the latent image support, in a portion at which the developer support comes in contact with the latent image support, to a predetermined size corresponding to a pressurizing force; and

restricting a movement of the developer support, via a spacer member, toward the latent image support.

Claim 85 (New): The image formation method according to claim 84, wherein the developing nip width setting unit includes:

a pressurizing unit which makes the developer support apply pressure to the latent image support to thereby form a developing nip, and

the width of the developing nip in the developing nip is set to a predetermined size by adjusting the size of the press-contacting pressure of the pressurizing unit.

Claim 86 (New): The image formation method of claim 85, further comprising:

increasing the pressurizing force by moving the developer support in the direction of the latent image support,

wherein the developer support is moved in the direction of the latent image support by an energizing force.

Claim 87 (New): The image formation method of claim 86, wherein the size of the energizing force is set to at least a force necessary for the developer support to move until being restricted by the spacer member, and

an elastic surface layer forms the surface of the developer support.

Claim 88 (New): The image formation method according to claim 84, further comprising a developing nip width change unit which changes the width of the developing nip.

Claim 89 (New): The image formation method of claim 88, wherein the latent image support is formed in a belt.

Claim 90 (New): The image formation method of claim 88, wherein the developer support is formed in a belt.

Claim 91 (New): The image formation method of claim 88, wherein a plurality of developer supports approach and separate from the surface of the latent image support to change the width of the developing nip.

Claim 92 (New): The image formation method of claim 91, further comprising:

rotating an eccentric cam to shift an axial position of the developer support or an axial

position of a support roller which supports a belt-form developer support.

Claim 93 (New): The image formation method of claim 84, wherein at least one of

the developer support and a liquid removal member is configured to approach and separate

from the latent image support.

Claim 94 (New): The image formation method of claim 84, wherein at least one of

the developer support and a liquid removal member includes an elastic inner layer and a resin

surface layer.

Claim 95 (New): The image formation method of claim 94, wherein the inner layer

includes a reconditioned rubber and the surface layer includes PFA.

Claim 96 (New): The image formation method of claim 94, wherein the inner layer

includes a urethane rubber and the surface layer includes PFA.

Claim 97 (New): The image formation method of claim 94, wherein the inner layer

and the surface layer are bonded using a conductive adhesive.

Claim 98 (New): The image formation method of claim 94, wherein the inner layer

includes a urethane rubber and the surface layer includes a urethane coating layer obtained by

coating a urethane resin on the inner layer.

Claim 99 (New): The image formation method of claim 84, wherein in the developing nip, the developer support surface and the latent image support surface are moved in the same direction at substantially a same linear velocity.

Claim 100 (New): The image formation method of claim 84, wherein the latent image support includes an amorphous silicon type photosensitive body.

Claim 101 (New): An image formation method comprising:

applying a liquid developer containing a toner dispersed in a carrier liquid to a surface of a developer support used to develop a latent image on a surface of a latent image support;

developing the latent image on the latent image support by a liquid developer supported on the developer support;

transferring a manifest image on the latent image support developed by the liquid developer to a transfer material;

pressing the developer support against the latent image support to form a developing nip of a predetermined width, as measured in a moving direction of the contacting surfaces of the developer support and the latent image support; and

adjusting the width of the developing nip by changing an encroaching quantity of the latent image support with respect to the developing roller.

Claim 102 (New): The image formation method of claim 101, wherein the developer support is a developing roller in a roller form, and an elastic surface layer which forms the surface of the developing roller.

Claim 103 (New): The image formation method of claim 101, further comprising:

rotating an eccentric cam to shift an axial position of the developer support or an axial

Claim 104 (New): An image formation method comprising:

position of a support roller which supports the belt-like developer support.

applying a liquid developer containing a toner dispersed in a carrier liquid to a surface of a developer support used to develop a latent image on a surface of a latent image support; and

developing the latent image on the latent image support by a liquid developer supported on the developer support;

transferring a manifest image on the latent image support developed by the liquid developer to a transfer material;

pressing the developer support against the latent image support to form a developing nip of a predetermined developing nip width, as measured in a moving direction of the contacting surfaces of the developer support and the latent image support;

removing the liquid developer remaining on the latent image support surface, after development, downstream in a moving direction of the contacting surfaces of the developer support and the latent image support; and

restricting the movement of the liquid removal member toward the latent image support via a spacer member.

Claim 105 (New): The image formation method of claim 104, further comprising: pressing the liquid removal member against the latent image support to thereby form a removal nip of a predetermined removal nip width corresponding to a pressurizing force of the liquid removal member;

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moving the liquid removal member, via an energizing force, in a direction of

increasing the pressurizing force of the liquid removal member.

Claim 106 (New): The image formation method of claim 105, wherein the size of the

energizing force is set to at least a force necessary for the liquid removal member to move

until being restricted by the spacer member.

Claim 107 (New): The image formation method according to claim 104, wherein the

liquid removal member pressurizing unit has a liquid removal member pressurization

adjusting unit which adjusts the size of the pressurizing force.

Claim 108 (New): The image formation method according to claim 104, further

comprising a developing nip width change unit which changes the width of the developing

nip.

Claim 109 (New): The image formation method of claim 108, wherein the latent

image support is formed in a belt.

Claim 110 (New): The image formation method of claim 108, wherein the developer

support is formed in a belt.

Claim 111 (New): The image formation method of claim 108, wherein a plurality of

developer supports approach and separate from the surface of the latent image support to

change the width of the developing nip.

Claim 112 (New): The image formation method of claim 111, further comprising:

rotating an eccentric cam to shift an axial position of the developer support or an axial

position of a support roller which supports a belt-form developer support in order to make at

least one of the plurality of developer supports approach and separate from the surface of the

latent image support.

Claim 113 (New): The image formation method of claim 104, wherein at least one of

the developer support and the liquid removal member is made to approach and separate from

the latent image support.

Claim 114 (New): The image formation method of claim 104, wherein at least one of

the developer support and the liquid removal member includes an elastic inner layer and a

resin surface layer.

Claim 115 (New): The image formation method of claim 114, wherein the inner layer

includes a reconditioned rubber and the surface layer includes PFA.

Claim 116 (New): The image formation method of claim 114, wherein the inner layer

includes a urethane rubber and the surface layer includes PFA.

Claim 117 (New): The image formation method of claim 114, wherein the inner layer

and the surface layer are bonded using a conductive adhesive.

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Claim 118 (New): The image formation method of claim 114, wherein the inner layer

is made of a urethane rubber and the surface layer is made of a urethane coating layer

obtained by coating a urethane resin on the inner layer.

Claim 119 (New): The image formation method of claim 104, wherein, in the

developing nip, the developer support surface and the latent image support surface are moved

in the same direction at substantially the same linear velocity.

Claim 120 (New): The image formation method of claim 104, wherein the latent

image support include an amorphous silicon type photosensitive body.